

AMENDMENTS TO THE CLAIMS

Please replace all prior versions and listings of the claims with the following amended listing of claims:

1. (currently amended) A method of testing the audio performance of an acoustic device, the acoustic device comprising a microprocessor, a device microphone, a device speaker, and an auxiliary output device each coupled to the microprocessor, the method ~~comprising steps of:~~

(a) ~~—producing an electric audio signal;~~

(b) ~~—providing the electric audio signal as an input to an external speaker and outputting an acoustic audio signal~~ corresponding to the electric audio signal representation thereof;

(c) ~~—providing the acoustic audio signal outputted from the external speaker as an input to the device microphone and outputting a further electric audio signal~~ corresponding to the acoustic audio signal to the representation thereof;

(d) ~~—directly routing the further electric audio signal using the microprocessor from the device microphone to the auxiliary output device using the microprocessor, and outputting the further electric audio signal from the auxiliary output device to an external test system it therefrom;~~ and

(e) ~~—analyzing the further electric audio signal outputted from the auxiliary output device~~ on the external test system.

2. (currently amended) The method of claim 1 wherein ~~in step (e) the further electric audio signal outputted from the auxiliary output device is compared to the electric audio signal produced in step (a).~~

3. (currently amended) The method of claim 1 wherein ~~in step (e) at least one signal characteristic of the further electric audio signal is compared to a predefined test limit.~~

4. (currently amended) The method of claim 1 wherein ~~in step (e) a plurality of~~

characteristics of the further electric audio signal are compared to predefined test limits for a plurality of audio signal characteristics selected from the group including signal amplitude, frequency response and harmonic distortion.

5. (currently amended) The method of claim 1 including connecting the external speaker to the device microphone with a seal prior to the acoustic audio signal being provided to the external speaker~~step (e)~~.

6. (currently amended) The method of claim 21 wherein the electrical connector is a headset plug through which the further electrical signal is output ~~in step (d)~~.

7. (currently amended) The method of claim 21 wherein electrical connector is a serial port through which the further electrical signal is output ~~in step (d)~~.

8. (currently amended) The method of claim 1 wherein ~~in step (a)~~ the electric audio signal is produced externally to the acoustic device ~~and in step (e) the further electric audio signal is analyzed externally to the acoustic device.~~

9. (currently amended) The method of claim 1 wherein the electric audio signal ~~produced in step (a)~~ represents a single tone signal.

10. (currently amended) The method of claim 1 wherein the electric audio signal ~~produced in step (a)~~ represents a multitone signal.

11. (previously presented) The method of claim 1 wherein the acoustic device is a hand-held voice-enabled wireless communications device having an RF transceiver coupled to the microprocessor.

12. (original) The method of claim 11 wherein the acoustic device is enabled for two-way wireless data communications.

13. (currently amended) The method of claim 1 wherein the auxiliary output device

is an auxiliary input/output device that is coupled to provide electric signals to the device speaker, the method comprising ~~further steps of:~~

- (f) —producing a speaker test electric audio signal;
- (g) —receiving the speaker test electric audio signal at the auxiliary input/output device;
- (h) —~~directly~~ routing the speaker test electric audio signal ~~using the microprocessor~~ from the auxiliary input/output device to the device speaker using the microprocessor, and outputting therefrom a device speaker acoustic audio signal corresponding to representation of the speaker test electric audio signal;
- (i) —providing the device speaker acoustic audio signal outputted from the device speaker as an input to an external microphone and outputting a device speaker electric audio signal corresponding to the representation thereof device speaker acoustic audio to the external test system; and
- (j) —analyzing the device speaker electric audio signal outputted from the external microphone on the external test system.

14. (currently amended) A method of testing the audio performance of an acoustic device, wherein the acoustic device comprises a microprocessor, a device speaker and an auxiliary input device each coupled to the microprocessor, the method comprising ~~steps of:~~

- (a) producing a speaker test electric audio signal;
- (b) providing the speaker test electric audio signal as an input to the auxiliary input device;
- (c) directly routing the speaker test electric audio signal using the microprocessor from the auxiliary input device to the device speaker;
- (d) outputting from the device speaker a device speaker acoustic audio signal corresponding to representation of the speaker test electric audio signal;
- (e) providing the device speaker acoustic audio signal outputted from the device speaker as an input to an external microphone and outputting a device speaker electric audio signal corresponding to the device speaker acoustic audio signal representation thereof to an external test system; and
- (f) analyzing the device speaker electric audio signal outputted from the

external microphone on the external test system.

15. (currently amended) The method of claim 14 wherein ~~in step (f)~~ the device speaker electric audio signal outputted from the auxiliary output device is compared to the speaker test electric audio signal ~~produced in step (a)~~.

16. (currently amended) The method of claim 14 wherein ~~in step (f)~~ at least one signal characteristic of the device speaker electric audio signal is compared to a predefined test limit.

17. (currently amended) The method of claim 14 wherein ~~in step (f)~~ a plurality of characteristics of the device speaker electric audio signal are compared to predefined test limits for a plurality of audio signal characteristics selected from the group including signal amplitude, frequency response and harmonic distortion.

18. (currently amended) The method of claim 22[14] wherein the electrical connector is a headset plug to which the speaker test electrical audio signal is provided ~~in step (b)~~.

19. (currently amended) The method of claim 22[14] wherein the electrical connector is a serial port to which the speaker test electrical audio signal is provided ~~in step (b)~~.

20. (currently amended) The method of claim 14 wherein ~~in step (a)~~ the speaker test electric audio signal is produced externally to the acoustic device ~~and in step (e) the device speaker electric audio signal is analyzed externally to the acoustic device~~.

21. (currently amended) The method of claim 1, wherein the auxiliary output device is an electrical connector, ~~step (d) including outputting the further electrical signal through the electrical connector~~.

22. (previously presented) The method of claim 14, wherein the auxiliary input

device is an electrical connector, ~~step (b) including inputting the speaker test electrical audio signal through the electrical connector.~~

23. (currently amended) A system for testing the audio performance of acoustic devices, the system comprising:

an external speaker for receiving an electric audio signal as input and outputting an acoustic audio signal representation thereof; and

an acoustic device comprising a microprocessor, a memory, a device microphone for receiving as input an acoustic audio signal output from the external speaker, a device speaker, and an auxiliary output device, each of the device microphone, device speaker and auxiliary output device being coupled to the microprocessor, the memory having data and instructions stored thereon to configure the microprocessor to:

receive a further electric audio signal representation of the acoustic audio signal from the device microphone as input; and

directly route the further electric audio signal to the auxiliary output device for output therefrom to an external test system for analysis.

24. (previously presented) The system of claim 23, wherein the auxiliary output device is an electrical connector.

25. (previously presented) The system of claim 23, wherein the electrical connector is a headset plug through which the further electrical signal is output.

26. (previously presented) The system of claim 23, wherein electrical connector is a serial port through which the further electrical signal is output.

27. (previously presented) The system of claim 23, wherein the acoustic device is a hand-held voice-enabled wireless communications device having an RF transceiver coupled to the microprocessor.

28. (previously presented) The system of claim 27, wherein the acoustic device is

enabled for two-way wireless data communications.

29. (previously presented) The system of claim 23, further comprising:

- an audio generator coupled to the external speaker for producing the electric audio signal and providing the electric audio signal to the external speaker; and
- an audio analyzer coupled to the auxiliary output device for receiving and analyzing the further electric audio signal.

30. (currently amended) The system of claim 23, further comprising:

- an external microphone for receiving an acoustic audio signal as input;
- wherein the auxiliary output device is an auxiliary input/output device coupled to further provide electric audio signals to the device speaker;
- wherein the memory having further data and instructions stored thereon to configure the microprocessor to:
 - receive an speaker test electric audio signal at the auxiliary input/output device;
 - directly route the speaker test electric audio signal from the auxiliary input/output device to the device speaker;
 - wherein the device speaker outputs a device speaker acoustic audio signal representation of the speaker test electric audio signal for input to the external microphone; and
 - wherein the external microphone outputs a device speaker electric audio signal representation thereof for analysis on an external test system.

31. (currently amended) A system for testing the audio performance of acoustic devices, the system comprising:

- an acoustic device comprising a microprocessor, a memory, a device speaker, and an auxiliary input device each coupled to the microprocessor, the memory having data and instructions stored thereon to configure the microprocessor to:
 - receive an speaker test electric audio signal at the auxiliary input device; and
 - directly route the speaker test electric audio signal from the auxiliary

input device to the device speaker for outputting an device speaker acoustic audio signal representation of the speaker test electric audio signal; and
an external microphone for receiving the device speaker acoustic audio signal from the device speaker as input, and outputting a device speaker electric audio signal representation thereof for analysis on an external test system.

32. (previously presented) The system of claim 31, wherein the auxiliary input device is an electrical connector.

33. (previously presented) The system of claim 32, wherein the electrical connector is a headset plug through which the further electrical signal is output.

34. (previously presented) The system of claim 32, wherein electrical connector is a serial port through which the further electrical signal is output.

35. (previously presented) The system of claim 31, wherein the acoustic device is a hand-held voice-enabled wireless communications device having an RF transceiver coupled to the microprocessor.

36. (previously presented) The system of claim 35, wherein the acoustic device is enabled for two-way wireless data communications.

37. (previously presented) The system of claim 31, further comprising:
an audio generator coupled to the auxiliary input device for producing the speaker test electric audio signal and providing the speaker test electric audio signal to the auxiliary input device; and
an audio analyzer coupled to the external microphone for receiving and analyzing the device speaker electric audio signal.